

Author Index to Volume 17

In this index are listed the names of authors and the titles of their articles and notes. Abstracts of papers read at meetings and of articles appearing under "Digest of Periodical Literature" in the Journal are generally not listed; however, they are indexed in the Analytic Subject Index. Those which are included in the Author Index are designated by the symbol (D). The symbol (L) after an entry signifies a Letter to the Editor.

- Adler, F. T. Review of *Principles of electricity and magnetism*—522
- Ainslie, D. S. Fluxmeter measurement of the earth's magnetic field—444
- Anderson, A. W. Scientific training in the Bureau of Ships—461(D)
- Andrews, C. L. Demonstrations of the use of microwaves in teaching physical optics—462(D)
- Baez, Albert V. (see Newell, Allen)—145
- Bailey, Carl L., Jaan Jurisson, and M. Eugene Rudd. Use of motion pictures in laboratory dynamical studies—517
- Ballard, Stanley S. When is a physicist?—235(D)
- Barr, E. Scott. Dynamical double-talk—325
- Barton, Viola P. One concept of pressure—318(L)
- Bartunek, Paul F. Modification of Rayleigh's method of measuring surface tension—461(D)
- Belinfante, Frederik J. On the mechanism of Brownian motion in liquids—468
- Bemmels, W. David. Self-sustaining electronic chord—515
- Benn, Robert E. Simple television demonstration—437
- Beth, Richard A. Review of *Principles of mathematical physics*—393
- Birge, Raymond T. Exact representation of a series of points by a polynomial in power series form—196
- Blackwood, O. H. Archie Garfield Worthing, 1881-1949—457
- Blake, Lamont V. Delusion of the scientific method—451(L)
- Blüh, Otto. Physics in premedical education—156
- Did the Greeks perform experiments?—234(D); 384
- L. W. Taylor's challenge to the teacher—244
- Review of *Elektricitätslehre*—524
- Bockstahler, Lester I. Meeting of the Chicago Section—164
- Bicycle ergometer—232(D)
- Bollman, Vernon L. Review of *The Elements of Physics*—95
- Bradford, R. S. (see Sanderman, L. A.)—514
- Brewington, G. P. Friction, a brief review, two new theorems and a problem—232(D)
- Convenient apparatus for the diffraction grating experiment—580
- Brinkman, H. C. Maxwell's thermodynamic relations—170(L)
- Brown, F. E. Review of *Outlines of physical chemistry*—165
- Brown, G. Burniston. Philosophies of science of Eddington and Milne—553
- Brown, Sanborn C. Count Rumford and the caloric theory of heat—462(D)
- Brown, T. B. Reactance measurements with a "Lecher wire" system—an experiment in advanced electrical measurements—235(D)
- Buceta, Gustavo Villar. Elementary proof of the equation $v = (T/\lambda)^{1/2}$ for the velocity of a transverse wave—443
- Velocity of a longitudinal wave by an elementary method—518(L)
- Buchdahl, H. A. On the principle of Carathéodory—41
- On the theorem of Carathéodory—44
- On the unrestricted theorem of Carathéodory and its application in the treatment of the second law of thermodynamics—212
- Bugosh, John. Simple mnemonic for Maxwell's thermodynamic relations—91(L)
- Burke, Paul J. Testing for critical thinking in physics—527
- Burrows, W. H. Graph papers as instruments of calculation—114
- Butler, Alfred B. Physics in motion pictures—447(L)
- Buxton, Claude E. Teacher training in the graduate school—571
- Carter, D. S. (see Volkoff, G.M.)—37
- and G. M. Volkoff. Quantum-mechanical problem of a particle in two adjacent potential minima. I. Direct solution—187; II. Solution by perturbation theory methods—303.
- Carter, F. M. and O. T. Koppius. Pressure coefficient of air in the general laboratory—460(D)
- Chamberlain, Katherine. Review of *Practical spectroscopy*—392
- Chapman, Seville. Review of *Science at war*—227
- Clark, C. C. College physical science courses in general education—234(D); 267
- Clark, W. P. Meeting of the Wisconsin Section—335; 403
- Cleveland, E. L. Adjacent-axes charts from ordinary graph papers—548
- Cochran, Lewis W. Meetings of the Kentucky Section—164; 459
- Cole, Malcolm. (see Winans, J. Gibson)—232(D); 503
- Colwell, R. C. Meeting of the Western Pennsylvania Section—211
- Condon, E. U. Development of American physics—404
- Connell, L. F., Jr., Use of a cathode-ray oscilloscope in Hoag's e/m experiment—222
- Constantinides, Philip A. Meeting of the Chicago Section—459
- Cork, J. M. Review of *A textbook of heat*—97
- Cornog, I. C. Review of *Elementary photography*—523
- Crawford, F. H. Jacobian methods in thermodynamics—1
- On Jacobian methods in thermodynamics—397(L)
- Maxwell's relations again—450(L)
- Crawley, C. B. (see Huff, Jesse B., Jr.)—460(D)
- Crew, Henry. Some recollections of Henry A. Rowland, 1848-1901—576
- Cruickshank, F. D. New method in the teaching of experimental physics—15
- Experimental approach to the paraxial properties of lens systems—204
- Cunningham, W. J. Subharmonic resonance—168(L)
- Dadourian, H. M. Action principles—511
- Darrow, Karl K. Twenty-five years of American physics—127
- Decker, Fred W. Meeting of the Oregon Section—335
- Dennison, David M. Review of *Introduction to statistical mechanics*—558
- DuBridge, Lee A. Effects of world war II on the science of physics—273
- Eastwood, D. E. and K. O. Lange. Some experiments in hygrometry—460(D)
- Eller, W. H. Student experiment with the common a.c. ammeter—442
- Epstein, H. T. (see Park, D.)—301
- Fano, U. Meson mass and range of nuclear forces—318(L)
- Interpretation of the Poisson brackets—449(L)
- Farwell, H. W. When is the sine of an angle equal to the angle?—448(L)
- Finkelstein, Nissim A. (see Sears, Francis W.)—225(L)
- Focken, Charles M. Maxwell's thermodynamic relations—225(L)
- Forman, G., P. Rudnick, F. G. Slack, and N. Underwood. Two-year course in basic elementary physics—22
- Freeman, Ira M. Review of *Suggestions for science teachers in devastated countries*—323
- Fretter, W. B. Penetrating showers in lead—148
- Gaehr, Paul F. Airy's theorem and the improvement of clocks; a reply—520(L)
- George, William H. Physicist and scientific method—201
- Gerjuoy, E. On Newton's third law and the conservation of momentum—477
- Glahtart, J. L. Benefits of industrial experience to the physics teacher—433
- Goble, A. T. Review of *The structure of matter*—523
- Goldowski, N. Physics for humanities majors—391(D)
- Goldstein, Herbert. Null method of comparing a capacity with a resistance—578

- Goodman, Clark. Review of *Nuclear radiation physics*—94
 Green, Wayne. (see Maxwell, Howard N.)—516
- Haden, Harley J. Oil well logging—an opportune field for the physicist—368
 — and William H. Morgan. Rangefinder using the eyes as objectives—73
- Haemmerle, Hermann. New apparatus for demonstrating an induced electromotive force—317
- Haisley, W. E. Simple mnemonic for Maxwell's thermodynamic relations—91(L)
- Ham, L. B. (see Hilton, Wallace A.)—500; 581(L)
- Hamermesh, Morton. Review of *Quantum Mechanics*—453
- Hamilton, D. R. Review of *Atomic energy*—97
- Harling, Reginald T. Simulated electric line—46
- Hartwell, W. H. Physics tour—170(L)
- Hause, C. D. Review of *High resolution spectroscopy*—394
- Hauver, George E. Color effect of fluorescent lighting—446(L)
- Heitzler, James R. Diffraction of light by two noncoplanar parallel straight edges—419
- Heldman, J. D. Review of *Vacuum manipulation of volatile compounds*—229
- Herbert, Sir Alan. Big Four, by A. P. H.—109 (reprint)
- Herrey, Erna M. J. Special science laboratory for nonscience education—233(D)
- Hilsenrath, Joseph. Preparation of students for employment at the bachelor's level—462(D)
- Hilton, Wallace A. (see Trayler, Robert F.)—398(L)
 — and L. B. Ham. Acoustical impedance and absorption coefficients—500
 — Acoustic radiator—581(L)
- Himpan, Joseph and Rudolf Reichel. Can we fly to the moon?—251
- Hitchcock, R. C. and R. W. Ure, Jr. Conversion charts—551
- Hoecker, Frank E. Review of *College physics*—96
- Holm, Gustave R. "Practical" system of electromagnetic units—168(L)
- Hopkins, N. J. Demonstration of nuclear magnetic resonance—518(L)
- Howe, C. E. and F. G. Tucker. Oberlin College laboratory of physics—246
- Huff, Jesse B., Jr. and C. B. Crawley. Study of the radiometer—460(D)
- Hughes, J. V. Problem about moving charges—319(L)
- Hulburt, E. O. Night sky radiations from the upper atmosphere—463
- Hull, Gordon F., Jr. Meeting of the New England Section, American Physical Society—47
 — Microwave experiments and their optical analogues—559
- Hummel, Virginia Hazelwood. (see Winans, J. Gibson)—232(D); 503
- Hutchisson, Elmer. Refresher program for high school physics teachers—234(D)
 — Summer refresher program for high school physics teachers—567
- Jackson, W. J. and E. A. Townsend. Course for nonscience majors—234(D)
- Jehle, Herbert. Borderline problem between physics and biology; selfduplication of genes—231(D)
- Joule, J. P. Some remarks on heat and the constitution of elastic fluids—63 (reprint)
- Jurisson, Jaan. (see Bailey, Carl L.)—517
- Katz, E. Note on pendulums—439
- Keller, Joseph M. Mesons old and new—356
- Kikuchi, C. and R. D. Spence. Microwave methods in physics. I. Microwave spectroscopy—288
- Kirkin, B. R. Certification of radiation physicists—62
- Kirkpatrick, Paul. Oersted Award—266
 — Address of recommendation of Professor Arnold Sommerfeld for the 1948 Oersted Medal for notable contributions to the teaching of physics—312
 — Simple determination of electronic mass—320(L)
- Klopfeg, Paul E. Annual report of the Association Treasurer—236
- Koehl, G. M. Simple demonstration experiments—232(D)
 — Archimedes' principle and the hydrostatic paradox—simple demonstrations—579
- Kofsky, Irving L. Sophomore laboratory experiment on determining γ for air—430
- Koppius, O. T. (see Carter, F. M.)—460(D)
- Kruglak, Haym. Delusion of the scientific method—23; 451(L); 460(T)
- Lange, K. O. (see Eastwood, D. E.)—460(D)
- Lark-Horovitz, K., Chairman. Cooperative Committee on the Teaching of Science and Mathematics. The work of Lloyd W. Taylor—243
- Leffer, Glenn Q., and O. L. Railsback. Meeting of the Illinois Section—93
- Lindsay, R. B. Review of *Cybernetics*—226
- Longacre, Andrew. Semantic approach to the general physics laboratory—413
- Lovell, Donald J. Fundamentals of colorimetry—233(D)
- Ludeke, C. A. Subharmonic resonance; a reply—169(L)
- Mackay, R. Stuart. Demonstration of electron paths perpendicular to a magnetic field—444
- Martin, Earl. Meeting of the Indiana Section—459
- Maxwell, Howard N. and Wayne Green. Vibrating string experiment—516
- McCombs, Rollin K. and William B. Pietenpol. Inexpensive arrangement for determining e/m by Busch's method—78
- McCue, J. J. G. Review of *A source book in Greek science*—228
- McGrath, J. W. Review of *Modern introductory physics*—454
- McInteer, B. B. and C. E. Schensted. Demonstration thermal diffusion column—417
- Medgyesay, P. A. B. Demonstration of Lissajous' figures—222
- Miller, Julius Sumner. Electrostatic behavior of soap bubbles—397(L)
 — Behavior of a carbon-filament lamp in a magnetic field when energized by (a) alternating current, (b) direct current—447(L)
 — Extension of a simple experiment designed to show the heat generated by a spark—447(L)
 — Electric discharge in air at reduced pressure—448(L)
 — Concerning lecture demonstrations—582(L)
- Montgomery, D. J. X. (see Vinti, John P.)—298
- Moon, Parry and Domina Eberle Spencer. Dimensions of physical concepts—171
 — Reply to M. M. Morris—452(L)
- Moore, K. H. Undergraduate course on theory of measurement—461(D)
- Morgan, William H. (see Haden, Harley J.)—73
- Morris, M. M. Dimensions of physical concepts—451(L)
- Nedelsky, Leo. Formulation of objectives of teaching in the physical sciences—345
- Newell, Allen and Albert V. Baez. Caustic curves by geometric construction—145
- Noll, Waldemar. Demonstration of image formation by a convex lens—391(D)
- Nye, H. A. Diffraction by two noncoplanar obstacles—449(L)
- Oldenberg, O. Millikan oil drop experiment in laboratory courses—35
- Osgood, Thomas H. Opportunities for graduate study in physics—80
- Overbeck, C. J. Annual report of the Association Secretary—236
- Owen, G. E. Contribution of physics laboratory work to general education—233(D)
 — Some contributions the physics laboratory can make to general education—270
- Palmer, Frederic. What about friction? Part I—181; Part II—327; Part III—336
- Park, D. and H. T. Epstein. On the Planck radiation formula—301
- Parker, Floyd W. Laboratory experiment on trajectories—233(D)
- Patterson, A. L. Review of *Fourier technique in x-ray organic structure analysis*—322
- Payne, Robert E. Maxwell's thermodynamic relations—225(L)
- Payne, W. T. Dirac's theory of magnetic poles—343
- Pelsor, Gene T. Microwave analog to a half-wave plate—223
- Penner, S. S. Optical methods for the determination of flame temperatures.
 Part I. Two-color and line-reversal techniques—422; Part II. Reversal methods for nonisothermal flames, two-path method, compensated hot-wire method, methods based on measurement of line intensities—491
- Perkins, Henry A. Observations of a "reactionary" physics teacher—233(D); 376
 — American prose—398(L)
- Pierce, J. A. Classroom model of vertical ionospheric reflection—542
- Pietenpol, William B. (see McCombs, Rollin K.)—78

- Pinkston, E. R. Meeting of the District of Columbia and Environs Section—391
- Railsback, O. L. (see Lefler, Glenn Q.)—93
- Combining of simple electronic instruments into a Z meter and its use in studying characteristics of radio equipment—232(D)
- Seminar on modern physics—460
- Rawlings, A. L. Airy's theorem and the improvement of clocks—519(L)
- Reed, A. R. Use of polystyrene to improve electrostatic equipment—391(D)
- Reichel, Rudolf. (see Himpan, Joseph)—251
- Can we fly to the moon; errata—520(L)
- Rex, Earl C. Eliminating the physics final examination—453(L)
- Rhodes, J. Elmer, Jr. Demonstrating the phase contrast principle—70
- Rix, H. David. Student's facility in American prose—90(L)
- Robertson, W. W. On classroom demonstrations—19
- Rodgers, Eric. Meeting of the Southeastern Section, American Physical Society—391
- Rogers, Eric M. Heat and thermodynamics in elementary courses—234(D)
- "Block-and-gap" scheme for physics courses—532
- Roller, Duane. Lloyd William Taylor, 1893-1948—239
- Rood, Paul. Experiments in static electricity—515
- Rudd, M. Eugene. (see Bailey, Carl L.)—517
- Rudnick, P. (see Forman, G.)—22
- Ryerson, J. L. Interesting exhibit—520(L)
- Sanderman, L. A. and R. S. Bradford. Simple Fresnel diffraction experiment—514
- Satterly, John. English composition and American prose—167(L)
- Schensted, C. E. (see McInteer, B. B.)—417
- Schlegel, Richard. Review of *Fear, war, and the bomb*—229
- Scott, Bruce I. H. Experimenting with virtual images—209
- Seamons, Robert S. Dimensions of angular displacement and torque—521(L)
- Sears, Francis W. and Niisson A. Finkelstein. Measurement of linear coefficients of expansion—225(L)
- Seely, Samuel. Review of *Radio at ultra-high frequencies*, Vol. II—98
- Selényi, P. Simple acoustical model of the Čerenkov phenomenon—581(L)
- Semat, Henry. Review of *Introduction to atomic physics*—165
- Shankland, R. S. Albert A. Michelson at case—487
- Slack, F. G. (see Forman, G.)—22
- Review of *Introduction to atomic physics*—454
- Sleator, W. W. Proofs of the equation $U = (E/\rho)^{1/2}$ for the velocity of sound—51
- Check and proofs of the Bernoulli equation—110
- Lecture demonstration of longitudinal waves—178
- Sommerfeld, A. Some reminiscences of my teaching career—315
- Spence, R. D. (see Kikuchi, C.)—288
- Review of *Microwaves and radar electronics*—322
- Spencer, Domina Eberle. (see Moon, Parry)—171; 452(L)
- Stephenson, R. J. Force derived from momentum and from kinetic energy—224
- Stevens, Norman. Simple concept of the Einstein photoelectric equation—92(L)
- Stewart, G. W. Brooklyn College student opinion report—90(L)
- Avoidable dangers in the rapid development of general education—379
- Strong, Foster. Meeting of the Southern California Section—164
- Summers, R. D. Comments upon "one concept of pressure"—319(L)
- ter Haar, D. Can we account for the observed abundances of the chemical elements—282
- Properties of He^a —399
- Townsend, E. A. (see Jackson, W. J.)—234(D)
- Traylor, Robert F. and Wallace A. Hilton. Another solution of the e/m experiment—398(L)
- Trent, Horace M. Laplace transform as a form of curve fitting—507
- Tucker, F. G. (see Howe, C. E.)—246
- Turner, Alva. Apparatus for measuring the force exerted on a magnet by a linear direct current—76
- Turner, Louis A. Maxwell's thermodynamic relations—397(L)
- Underwood, N. (see Forman, G.)—22
- Ure, R. W., Jr. (see Hitchcock, R. C.)—551
- Valasek, Joseph. Review of *Principles of physics III. Optics*—392
- Vallese, Lucio M. Network representation of input and output admittances of amplifiers—482
- Vineyard, George H. Place of theory in scientific method—66
- Review of *Physics, principles and applications*—455
- Vinti, John P. and D. J. X. Montgomery. Note on the presentation of Maxwell's equations—298
- Volkoff, G. M. (see Carter, D. S.)—187; 303
- and D. S. Carter. On the shearing stress in a viscous fluid across a surface normal to the lines of flow—37
- von Laue, M. Report on the state of physics in Germany—137
- Walker, Eric A. Scientist and government research—30
- Walker, M. J. Geometrical introduction to tensor analysis for the physicist—5
- Wall, C. N. Concerning the teaching of physics—263
- Cooperative testing program—355
- Walters, Geraldine Ross. (see Winans, J. Gibson)—232(D); 503
- Warburton, F. W. Three primary units are sufficient; a reply—320(L)
- Waterman, Alan T. Boner—311
- Watson, Bernard B. Instructional technique for the general physics laboratory—519(L)
- Science courses in general education—526
- Watson, E. C. First published calculation of molecular speeds—63
- Reproductions of prints, drawings and paintings of interest in the history of physics. 40. *Vanity Fair* caricature of John Tyndall—86; 41. *Vanity Fair* caricatures of Charles Darwin and Thomas Huxley—153; 42. *Vanity Fair* caricatures of Herbert Spencer and John Stuart Mill—219; 43. *Vanity Fair* caricature of William Robert Grove—310; 44. *Vanity Fair* caricatures of George Biddle Airy and Richard Anthony Proctor—389; 45. *Vanity Fair* caricature of Louis Pasteur—432
- Weale, Robert. Simple color patch apparatus—89
- Weber, Robert L. Films selected for first-year college physics—408
- Weniger, W. Review of *Physics for arts and sciences*—324
- Wigner, E. P. Nuclear reactions and level widths—99
- Winans, J. Gibson. Force as a basic physical quantity—142
- Malcolm Cole, Geraldine Ross Walters, and Virginia Hazelwood Hummel. Method of teaching alternating current circuits—232(D)
- Teaching alternating current circuits—503
- Young, Pearl I. Student's facility in American prose—90(L)
- Zemansky, Mark W. Demonstration of Pohl's interference experiment—232(D)
- Films showing repetitive phenomena—a progress report of the Committee on Visual Aids—462(D)

Analytic Subject Index to Volume 17

The titles of articles are disregarded, the entries being based on analyses of the contents of the articles. The symbol (D) designates a digest of an article or an abstract of a paper read at a meeting: (T) designates title only and (L) designates a Letter to the Editor.

To facilitate reference to any desired subject, the index is divided into sections arranged alphabetically. The titles of these sections and of cross references to them are as follows:

Accelerators
Aerophysics
American Association of Physics Teachers
American Physical Society
Apparatus
Biographies
Biophysics
Cosmic rays and mesons
Courses
Demonstrations
Departmental administration, maintenance, and activities
Education, physics and science
Electricity and magnetism

Employment of physicists
Experiments
General education
General physics, educational aspects
General physics, instructional techniques
Heat and thermodynamics
History and biography
Industrial and government research
Laboratory organization
Light
Mathematics
Mechanics
Modern physics
Nuclear physics

Philosophy of science
Properties of matter
Reports, announcements, and news
Rockets
Secondary-school physics
Social and economic aspects of science
Sound
Teacher training
Testing, theory and techniques
Textbooks
Units and dimensions
Use of the American language
Visual materials and methods

Accelerators

Betatron, D. W. Kerst—461(T)
Cyclotron, A. T. Nordieck, G. F. Tape, and P. G. Kruger—461(T)

Aerophysics

Atmospheric ozone, Fred W. Decker—335(T)
Controlled atmosphere for aircraft engines, C. H. Voelker—391(T)
Electric discharge in air at reduced pressure, Julius Sumner Miller—448(L)
Night sky radiations from the upper atmosphere, E. O. Hulburt—463
Rocketborne upper atmosphere experiments of the Air Materiel Command, Marcus O'Day—391(T)
Shock waves, Charles W. Mautz—93(D)
Upper atmosphere, Donald H. Menzel—49(D)

American Association of Physics Teachers

Cooperative testing program, C. N. Wall—231(T); 355
Meeting at New York, January 27–29, 1949: program and abstracts—231; secretary's report, C. J. Overbeck—236; treasurer's report, Paul E. Klopsteg—236
Meeting at Troy, New York, June 23–24, 1949—461
Members, new: 50, 98, 166, 325, 395, 456, 525, 558
Necrology: Lloyd William Taylor, 1893–1948; Duane Roller—239; Archie Garfield Worthing, 1881–1949; O. H. Blackwood—457
Oersted Award, Paul Kirkpatrick—266
Oersted Medal for 1948 to Professor Arnold Sommerfeld: Address of citation by Paul Kirkpatrick—231(T) 312; Acceptance on behalf of Professor Sommerfeld, E. U. Condon—231(T); Some reminiscences of my teaching career, A. Sommerfeld—315; Presentation of the 1948 Oersted Medal for notable contributions to the teaching of physics—456
Richtmyer Memorial Lecture—How World War II Has Affected the Science of Physics, Lee A. DuBridge—231(T); review by T. A. Rouse—335(T); Effects of world war II on the science of physics, Lee A. DuBridge—273

Section news: Chicago, Lester I. Bockstahler—164, Philip A. Constantines—459; District of Columbia and Environs, E. R. Pinkston—391; Illinois, Glenn Q. Lefser and O. L. Railsback—93; Indiana, Earl Martin—459; Kentucky, Lewis W. Cochran—164, 459; Oregon, Fred W. Decker—335; Southern California, Foster Strong—164; Western Pennsylvania, R. C. Colwell—211; Wisconsin, W. P. Clark—335, 403

American Physical Society

Address of the retiring president—Fields and Quanta, J. R. Oppenheimer—231(T)
Section news: New England, Gordon F. Hull, Jr.—47; Southeastern, Eric Rodgers—391

Apparatus

Absorption cells for vacuum spectroscopy, Robert H. Noble—93(D)
Atomic clock, Harold Lyons—391(T)
Bicycle ergometer, Lester I. Bockstahler—232(D)
Bohr atom model, R. C. Hitchcock—211(T)
Carrier-current campus broadcast station, James S. Williams, Leslie Cole, and J. S. V. Allen—211(T)
Combining of simple electronic instruments into a Z meter and its use in studying characteristics of radio equipment, O. L. Railsback—93(T); 232(D)
Construction of a standard lamp, R. Hanau—164(T)
Convenient apparatus for the diffraction grating experiment, G. P. Brewington—580
Glycerol vapor vacuum pump, Paul Alexander—47(D)
High speed rotors, J. W. Beams—391(T)
Microwave analog of a half-wave plate, Gene T. Pelsor—223
Range-finder using the eyes as objectives, Harley J. Haden and William H. Morgan—73
Self-sustaining electronic chord, W. David Bemmels—515
Simple acoustical model of the Čerenkov phenomenon, Dr. P. Selényi—581(L)
Simple color patch apparatus, Robert Weale—89
Simple electronic timer, R. R. Palmer—335(T)
Student spectrometer from surplus materials, R. A. Loring and R. L. Remely—460(T)
Use of polystyrene to improve electrostatic equipment, A. R. Reed—391(D)

Biographies

Albert A. Michelson at Case, R. S. Shankland—487
Cooperative Committee on the Teaching of Science and Mathematics. The work of Lloyd W. Taylor—243
Some recollections of Henry A. Rowland, 1848–1901, Henry Crew—576
Thomas Hariot, 1560–1621, Dr. John Shirley—460(T)

Biophysics

Biological and psychological effects of ultrasonics, Hallowell Davis—48(D)
Borderline problem between physics and biology: selfduplication of genes, Herbert Jehle—231(D)
Research in biophysics, Ray S. Snider—459(T)
Story of vitamin B₁, R. R. Williams—460(T)

Cosmic rays and mesons

Artificial production of mesons, J. R. Richardson—164(T)
Meson mass and range of nuclear forces, U. Fano—318(L)

- Mesons old and new, Joseph M. Keller—356
 Meson theory and particle detection, J. N. Snyder and C. W. Sherwin—461(T)
 Penetrating showers in lead, W. B. Fretter—148
 Theory of the solar origin of cosmic rays, Winfield W. Salisbury—93(D)
- Courses**
 Course and curriculum, Erland Ritchie—164(T)
 Course for nonscience majors, W. J. Jackson and E. A. Townsend—234(D)
 Elementary courses for senior mechanical engineering students, Elmer Hutchisson—461(T)
 Nature and objectives of the physics program at Lawrence, W. P. Gilbert—335(T)
 Physical science for students of the liberal arts, J. J. G. McCue—47(T)
 Physics for humanities majors, N. Goldowski—391(D)
 Problem of the introduction of the new material into the undergraduate program; (a) the organization of the new material in the courses (b) the selection and development of equipment to be used in the courses, Jacob A. Rinker—94(D)
 Proposed intermediate course in spectroscopy, William Lewis—460(T)
 Refresher program for high school physics teachers, Elmer Hutchisson—234(D)
 Summer refresher program for high school physics teachers, Elmer Hutchisson—567
 Two-year course in basic elementary physics, G. Forman, P. Rudnick, F. G. Slack, and N. Underwood—22
 Undergraduate course on theory of measurement, K. H. Moore—461(D)
- Demonstrations**
 Archimedes' principle and the hydrostatic paradox—simple demonstrations, George M. Koehl—579
 Behavior of a carbon-filament lamp in a magnetic field when energized with (a) alternating current, (b) direct current, Julius Sumner Miller—447(L)
 Classroom model of vertical ionospheric reflection, J. A. Pierce—542
 Concerning lecture demonstrations, Julius Sumner Miller—582(L)
 Demonstrating the phase contrast principle, J. Elmer Rhodes, Jr.—70
 Demonstration of an analogue computer for differential equations, high speed counter of several thousand per second, super stop watch, a memory tube, Cyril N. Hoyler—460(T)
 Demonstration of banked curves, Everett Haynes—93(D)
 Demonstration of electron paths perpendicular to a magnetic field, R. Stuart Mackay—444
 Demonstration of Euler's angles, L. Horn—460(T)
 Demonstration of image formation by a convex lens, Waldemar, Noll—391(D)
 Demonstration of Lissajous' figures, P. A. B. Medgyessy—222
 Demonstration of new equipment, R. E. Harris—459(T)
 Demonstration of nuclear magnetic resonance, N. J. Hopkins—518(L)
 Demonstration of Pohl's interference experiment, Mark W. Zemansky—232(D)
 Demonstration thermal diffusion column, B. B. McInteer and C. E. Schensted—417
 Demonstrations in the study of light, Ralph Loring—459(T)
 Demonstrations of the use of microwaves in teaching physical optics, C. L. Andrews—462(D)
 Extension of a simple experiment designed to show the heat generated by a spark, Julius Sumner Miller—447(L)
 Gadgets used in simple demonstrations, R. L. Feldman—391(T)
 Interesting exhibit, J. L. Ryerson—520(L)
 Lantern slide color demonstration, Sheldon Brown—164(T)
 Lecture demonstration of longitudinal waves, W. W. Sleator—178
 Magnetic amplifiers demonstration, W. E. Sargeant—460(T)
 Microwave demonstrations in the teaching of physics, W. H. Pickering—164(T)
 New apparatus for demonstrating an induced electromotive force, Hermann Haemmerle—317
 On classroom demonstrations, W. W. Robertson—19
 Simple demonstration experiments, G. M. Koehl—232(D)
 Simple television demonstration, Robert E. Benn—437
 Special exhibit of microwaves, C. L. Andrews—460(T)
 Techniques for demonstrating color phenomena, Isay A. Balinkin—231(T)
 Wave motion demonstration, Seth E. Elliott—459(T)
Departmental administration, maintenance, and activities (see Education, physics and science)
 Oberlin College laboratory of physics, C. E. Howe and F. G. Tucker—246
- Education, physics and science**
 Benefits of industrial experience to the physics teacher, J. L. Glatthart—433
 Brooklyn College student opinion report, G. W. Stewart—90(L)
 Concerning the teaching of physics, C. N. Wall—263
 Education—or merely training? V. Force—A fact or a fiction? George Forster—164(T)
 Graduate school of nuclear engineering, F. Ellis Johnson—461(T)
 L. W. Taylor's challenge to the teacher, Otto Blüh—244
 On simplifying physics, Richard R. Dempster—335(T)
 Opportunities for graduate study in physics, Thomas H. Osgood—80
 Physics in physics, A. G. Shenstone—231(T)
 Physics tour, W. H. Hartwell—170(L)
 Possible use of field trips; for the student, for the teacher, Robert F. Paton—94(D)
- Electricity and magnetism**
 Apparatus for measuring the force exerted on a magnet by a linear direct current, Alva Turner—76
 Attenuators and pads, James A. Richards—93(D)
 Balanced d.c. amplifier, W. O. Shropshire—164(T)
 Degaussing, H. Craig—88(D)
 Dirac's theory of magnetic poles, W. T. Payne—343
 Electric discharge in air at reduced pressure, Julius Sumner Miller—448(L)
 Electrostatic behavior of soap bubbles, Julius Sumner Miller—397(L)
 Fringing field corrections for magnetic sector lenses and prisms, K. T. Bainbridge—47(T)
 Impedance problems, A. D. Hummel—459(T)
 Inexpensive arrangement for determining ϵ/m by Busch's method, Rollin K. McCombs and William B. Pietenpol—78
 Method of measurement of small periodic displacements and its application to determining the piezoelectric constants of potassium dihydrogen arsenate, Thaddeus Niemi—47(T)
 Model of a ferro-magnet, T. H. Berlin—164(T)
 Network representation of input and output admittances of amplifiers, Lucio M. Vallesse—211(T); 482
 Note on the presentation of Maxwell's equations, John P. Vinti and D. J. X. Montgomery—298
 Null method of comparing a capacity with a resistance, Herbert Goldstein—578
 Off-center magnetic field for a circular current, Orrin H. Smith—459(T)
 Problem about moving charges, J. V. Hughes—319(L)
 Simulated electric line, Reginald T. Harling—46
 Surface resistance of superconductors at microwave frequencies, W. M. Fairbank—47(T)
 Why the common type of a.c. ammeter reads what it does when carrying both a.c. and d.c. W. H. Eller—93(T)
- Employment of physicists**
 Oil well logging—an opportune field for the physicist, Harley J. Haden—368
 Preparation of students for employment at the bachelor's level, Joseph Hilsenrath—462(D)
 When is a physicist? Stanley S. Ballard—235(D)
- Experiments**
 Another solution of the ϵ/m experiment, Robert F. Trayler and Wallace A. Hilton—398(L)
 Determination of the specific gravity of wood by elementary students, Foster Burgess—164(T)
 Experiment for the study of transients in electrical circuits, V. L. Bollman—164(T)
 Experimental approach to the paraxial properties of lens systems, F. F. Cruickshank—204
 Experimenting with virtual images, Bruce I. H. Scott—209
 Experiments for a lecture on momentum, Richard T. Cox—391(T)
 Experiments in static electricity, Paul Rood—515

- Fluorescent lamp as an experiment in a.c. vector diagrams, Willard Geer—164(T)
- Fluxmeter measurement of the earth's magnetic field, D. S. Ainslie—444
- Laboratory experiment on trajectories, Floyd W. Parker—233(D); review by Willard J. Pearce—335(T)
- Microwave experiments and their optical analogs, Gordon Ferrie Hull, Jr.—559
- Millikan oil drop experiment in laboratory courses, O. Oldenberg—35
- Modification of Rayleigh's method of measuring surface tension, Paul F. Bartunek—461(D)
- Pressure coefficient of air in the general laboratory, F. M. Carter and O. T. Koppius—460(D)
- Quantitative experiments on gyroscopic motion and rotational inertia, Philip A. Constantinides—164(T)
- Reactance measurements with a "Lecher wire" system—an experiment in advanced electrical measurements, T. B. Brown—235(D)
- Simple determination of electronic mass, Paul Kirkpatrick—320(L)
- Simple equipment for an experiment on moment of inertia, Thomas H. Osgood—93(D)
- Simple Fresnel diffraction experiment, L. A. Sanderman and R. S. Bradford—514
- Some experiments in hygrometry, D. E. Eastwood and K. O. Lange—460(D)
- Sophomore laboratory experiment on determining γ for air, Irving L. Kofsky—430
- Student experiment with the common a.c. ammeter, W. H. Eller—442
- Use of a cathode-ray oscilloscope in Hoag's e/m experiment, L. F. Connell, Jr.—222
- Use of the automobile transmission as a quantitative group experiment in first-year general physics, Robert C. Waddell—94(T)
- Vibrating string experiment, Howard N. Maxwell and Wayne Green—516
- General education** (see Education, physics and science)
- Aims and schemes in general education in physics courses, Eric Rogers—231(T)
- Avoidable dangers accompanying the rapid development of general education, G. W. Stewart—231(T)
- Avoidable dangers in the rapid development of general education, G. W. Stewart—379
- College physical science courses in general education, C. C. Clark—234(D); 267
- Contribution of physics laboratory work to general education, G. E. Owen—233(D)
- Laboratory work in general education (physics and chemistry), James F. Mackell—459(T)
- Place of mathematics in general education, Edward A. Cameron—48(D)
- Physics courses in the general education program at Harvard, P. Le Corbeller—231(T)
- Physics in general education—keynote address, James B. Conant—231(T)
- Relation of physics and the physical sciences to the general education student, Otto Kraushaar, B. D. Van Evera, J. J. Hinson, R. A. Goodwin, and W. A. Kilgore—391(T)
- Science courses in general education, Bernard B. Watson—526
- Some contributions the physics laboratory can make to general education, Gwilym E. Owen—270
- General physics, educational aspects**
- A thought for teachers, Phillip Frank—324(D)
- Attitude and education, W. B. Wiegand—47(D)
- Boner, Alan T. Waterman—311
- Difficulties in offering a physical science course, June Phillpot—335(T)
- Eliminating the physics final examination, Earl C. Rex—453(L)
- Formulation of objectives of teaching in the physical sciences, Leo Nedelsky—345
- Neglect of molar quantities in physics courses, J. C. Hendricks—459(T)
- Observations of a "reactionary" physics teacher, Henry A. Perkins—233(D); 376
- Physics in premedical education, Otto Blüh—156
- Possibilities and limitations of the undergraduate work in electronic and atomic physics as viewed from the research laboratory, G. D. Adams—94(D)
- Role of the teacher in the general physics course, W. W. McCormick—460(T)
- Some comments on returning to teaching from industry, J. G. Black—164(T)
- General physics, instructional techniques**
- Basic electrical principles through functional methods, R. A. Rogers—460(T)
- "Block-and-gap" scheme for physics courses, Eric M. Rogers—532
- Contributions to teaching methods: roundtable discussion, J. G. Winans—460(T)
- Entropy—how should it be taught? L. E. Dodd—164(T)
- Heat and thermodynamics in elementary courses, Eric M. Rogers—234(D)
- Instructional technique for the general physics laboratory, Bernard B. Watson—519(L)
- Method of teaching alternating current circuits, J. Gibson Winans, Malcolm Cole, Geraldine Ross Walters, and Virginia Hazelwood Hummel—232(D)
- New method in the teaching of experimental physics, F. D. Cruickshank—15
- Semantic approach to the general physics laboratory, Andrew Longacre—413
- Teaching alternating currents, J. G. Winans—460(T)
- Teaching alternating current circuits, J. G. Winans, Malcolm Cole, Geraldine Ross Walters, and Virginia Hazelwood Hummel—503
- Use of nuclear plates in teaching, F. L. Talbot—391(T)
- Heat and thermodynamics**
- First published calculation of molecular speeds, E. C. Watson—63
- Jacobian methods in thermodynamics, F. H. Crawford—1
- Maxwell's relations again, F. H. Crawford—450(L)
- Maxwell's thermodynamic relations, Charles M. Focken—225(L)
- Maxwell's thermodynamic relations, H. C. Brinkman—170(L)
- Maxwell's thermodynamic relations, Louis A. Turner—397(L)
- Maxwell's thermodynamic relations, Robert E. Payne—225(L)
- Measurement of linear coefficients of expansion, Francis W. Sears and Nisson A. Finkelstein—225(L)
- New international temperature scale—326
- On Jacobian methods in thermodynamics, F. H. Crawford—397(L)
- On the principle of Carathéodory, H. A. Buchdahl—41
- On the unrestricted theorem of Carathéodory and its application in the treatment of the second law of thermodynamics, H. A. Buchdahl—212
- Simple mnemonic for Maxwell's thermodynamic relations, John Bugosh—91(L)
- Simple mnemonic for Maxwell's thermodynamic relations, W. E. Haisley—91(L)
- Some problems in heat conduction in cylindrical coordinates, R. H. Ritchie and C. B. Crawley—164(T)
- Some remarks on heat and the constitution of elastic fluids, J. P. Joule—63 (reprint)
- Study of the radiometer, Jesse B. Huff, Jr., and C. B. Crawley—460(D)
- History and biography**
- Big four, by A. P. H. Sir Alan Herbert—109 (reprint)
- Count Rumford and the caloric theory of heat, Sanborn C. Brown—462(D)
- Development of American physics, E. U. Condon—404
- Did the Greeks perform experiments? Otto Blüh—234(D); 384
- Physics at Washington and Jefferson College in the nineteenth century, R. M. Bell—211(T)
- Reproductions of prints, drawings and paintings of interest in the history of physics, E. C. Watson: 40. *Vanity Fair* caricature of John Tyndall—86; 41. *Vanity Fair* caricatures of Charles Darwin and Thomas Huxley—153; 42. *Vanity Fair* caricatures of Herbert Spencer and John Stuart Mill—219; 43. *Vanity Fair* caricature of William Robert Grove—310; 44. *Vanity Fair* caricatures of George Biddle Airy and Richard Anthony Proctor—389; 45. *Vanity Fair* caricature of Louis Pasteur—432
- Twenty-five years of American physics, Karl K. Darrow—127
- Industrial and government research**
- Scientist and government research, Eric A. Walker—30

Laboratory organization

- Case for collective research, J. D. Bernal—113(D)
- Case for individualism, Michael Polanyi—113(D)
- Oak Ridge national laboratory, A. M. Weinberg—391(T)
- Special science laboratory for nonscience education, Erna M. J. Herrey—233(D)

Light (see Apparatus)

- Brightness and field of view of the telescope, Carl A. Beck—391(T)
- Caustic curves by geometric construction, Allen Newell and Albert V. Baez—145
- Color effect of fluorescent lighting, George E. Hauver—446(L)
- Diffraction by two non-coplanar obstacles, H. A. Nye—449(L)
- Diffraction of light by two noncoplanar parallel straight edges, James R. Heitzler—419
- Fundamentals of colorimetry, Donald J. Lovell—233(D)
- Jamin interferometer for juniors in optics laboratory, Orrin H. Smith—460(T)
- On the Planck radiation formula, D. Park and H. T. Epstein—301
- Optical methods for the determination of flame temperatures, S. S. Penner. Part I. Two-color and line-reversal techniques—422; Part II. Reversal methods for nonisothermal flames, two-path method, compensated hot-wire method, methods based on measurement of line intensities—491
- Optical sign conventions, O. Darbyshire—88(D)
- Precise measurements of the molar refraction of carbon dioxide and its variation with density, Victor H. Coffin and Clarence E. Bennett—47(T)
- Simple concept of the Einstein photoelectric equation, Norman Stevens—92(L)
- Some optical properties of paper, George R. Sears—335(T)
- Use of dioptric power of lenses in the solution of optics problems, P. C. Overstreet—164(T)

Mathematics

- Adjacent-axes charts from ordinary graph papers, E. L. Cleveland—548
- Conversion charts, R. C. Hitchcock and R. W. Ure, Jr.—551
- Exact representation of a series of points by a polynomial in power series form, Raymond T. Birge—196
- Geometrical introduction to tensor analysis for the physicist, M. J. Walker—5
- Graph papers as instruments of calculation, W. H. Burrows—114
- Interpretation of the Poisson brackets, U. Fano—449(L)
- Laplace transform as a form of curve fitting, Horace M. Trent—507
- On the theorem of Carathéodory, H. A. Buchdahl—44
- Operational methods in mathematical physics, L. B. Robinson—391(T)
- Radian as a unit axial vector, A. G. Worthing—211(T)
- When is the sine of an angle equal to the angle? H. W. Farwell—448(L)

Mechanics (see Apparatus)

- Action principles, H. M. Dadourian—511
- Airy's theorem and the improvement of clocks, A. L. Rawlings—519(L)
- Airy's theorem and the improvement of clocks; a reply, Paul F. Gaeher—520(L)
- Check and proofs of the Bernoulli equation, W. W. Sleator—110
- Comments upon "one concept of pressure", R. D. Summers—319(L)
- Confetti and turbulence, Earl W. Thomson—391(T)
- Does a baseball curve? Jose Rubio—164(T)
- Dynamical double-talk, E. Scott Barr—325
- Elementary derivation of the formula for centripetal acceleration, W. T. Payne—460(T)
- Elementary proof of the equation $v = (T/\lambda)^{1/2}$ for the velocity of a transverse wave, Gustavo Villar Buceta—443
- Force as a basic physical quantity, J. Gibson Winans—142
- Force derived from momentum and from kinetic energy, R. J. Stephenson—224
- Normal and oblique precessions: the effects of centripetal force and variable torque, Philip A. Constantinides—459(T)
- Note on pendulums, E. Katz—439
- On Newton's third law and the conservation of momentum, E. Gerjuoy—477
- On the shearing stress in a viscous fluid across a surface normal to the lines of flow, G. M. Volkoff and D. S. Carter—37

- One concept of pressure, Vola P. Barton—318(L)
- Quantum-mechanical problem of a particle in two adjacent potential minima, D. S. Carter and G. M. Volkoff, Part I. Direct solution—187; Part II. Solution by perturbation theory methods—303
- Resume of various applications and forms of the gyroscope in industry and in nature, Carl A. Frische—460(T)
- Subharmonic resonance, W. J. Cunningham—168(L)
- Subharmonic resonance; a reply, C. A. Ludeke—169(L)
- Use of vector methods in deriving some formulas in mechanics, Keith R. Symon—93(D)
- Velocity of a longitudinal wave by an elementary method, Gustavo Villar Buceta—518(L)

Modern Physics

- New 170-in. synchrocyclotron, S. K. Allison—164(T)
- Seminar on modern physics, O. L. Railsback—460
- Statitron of the physics department at Johns Hopkins University, D. R. Inglis—391(T)

Nuclear physics

- Alpha- and gamma-ray spectroscopy, E. G. Ebbighausen—335(T)
- Construction and study of the characteristics of Geiger-Mueller counters, G. S. Hurst—164(T)
- Nuclear reactions and level widths, E. P. Wigner—99
- 1 Rutherford = 10^6 Disintegrations per second.—238
- Review of recent proposals concerning nuclear structure, J. G. Winans—335(T)
- Search for beta-proton coincidences associated with neutron decay, A. H. Snell—391(T)
- Science and engineering of nuclear power, Clark Goodman—461(T)
- Scintillation counting, W. L. Lawrence and L. W. Cochran—460(T)
- Study of nuclear energy levels, P. Axel and W. Meyerhof—461(T)

Philosophy of science

- Attempt toward more wisdom and less knowledge, Richard Schlegel—93(D)
- Delusion of the scientific method, Haym Kruglak—23; 451(L); 460(T)
- Delusion of the scientific method, Lamont V. Blake—451(L)
- Experiment vs. authority of the ancients, Galileo Galilei—36(D)
- I have been to the village, D. Q. Posin—460(T)
- Philosophies of science of Eddington and Milne, G. Burniston Brown—553
- Physicist and scientific method, William H. George—201
- Place of theory in scientific method, George H. Vineyard—66

Properties of matter

- Can we account for the observed abundances of the chemical elements? D. ter Haar—282
- Fluid properties of liquid helium, A. D. Misener—47(T)
- Friction, G. P. Brewington—460(T)
- Friction, a brief review, two new theorems and a problem, G. P. Brewington—232(D); review by Donald Olson—335(T)
- Helium three isotope at liquid helium temperature, H. A. Fairbank—47(T)
- Isotopic weights, K. T. Bainbridge—47(T)
- Microwave methods in physics, I. Microwave spectroscopy, C. Kikuchi and R. D. Spence—288
- New developments in infrared spectrometry, Earle K. Plyler—391(T)
- On the mechanism of Brownian motion in liquids, Frederik J. Belinfante—468
- Properties of He⁴, D. ter Haar—399
- Small spherical particles of exceptionally uniform size, R. C. Williams—93(D)
- Surface states in semi-conductors, Gordon C. Danielson—460(T)
- What about friction? Frederic Palmer, Part I—181, Part II—327, Part III—336

Reports, announcements, and news

- Availability of radioantimony—beryllium neutron sources—476
- Certification of radiation physicists—62
- Discussion of current topics—459(T)
- Eddington prize—431
- Engineering education—plus, C. E. MacQuigg—48(D)
- Fellowships administered by the National Research Council—29
- Meetings of the Michigan Teachers of College Physics—93; 460

Navy Reserve Unit in electronics associated with Centre College, Roy Ellis—460(T)
 Oak Ridge Institute of nuclear study, W. G. Pollard—461(T)
 Present and future in television in Illinois, Howard Hackett—94(T)
 Report on the state of physics in Germany, M. von Laue—137
 Report on the Washington meeting, E. F. Barker—460(T)
 Scientific training in the Bureau of Ships, A. W. Anderson—461(D)
 University of Iowa Colloquium for College Physicists—460
 University of the Philippines, Manila—321

Rockets

Can we fly to the moon? Joseph Himpan and Rudolph Reichel—251
 Can we fly to the moon; errata, Rudolf Reichel—520(L)

Secondary-school physics

Report from the high school physics test committee—164(T)
 Research project as motivating factor in high school physics, E. P. Heinrich—391(T)
 Where high school and college physics meet, Thomas A. Shotwell—335(T)

Social and economic aspects of science (see Education, physics and science)

Freedom versus security in the modern world, Robert E. Cushman—231(T)
 Fundamental democracy and the forgotten physicist, P. W. Bridgman—231(T)
 Physics and our civilization, D. L. Soltan—164(T)
 Some comments on the relation of science and society, Waldemar Noll—164(T)

Sound (see Apparatus)

Acoustic radiator, Wallace A. Hilton and L. B. Ham—581(L)
 Acoustical impedance and absorption coefficients, Wallace A. Hilton and L. B. Ham—500
 Proofs of the equation $U = (E/\rho)^{1/2}$ for the velocity of sound, W. W. Sleator—51
 Research in speech, John C. Steinberg—460(T)
 Sound pulses, E. K. Holland-Moritz—460(T)
 Velocity of a compressional pulse, William W. Sleator—93(D)

Teacher training (see Education, physics and science)

Graduate training of college teachers, Rogers D. Rusk—460(T)
 How should graduate schools modify the training patterns for prospective college teachers? G. B. Pegram—231(T)
 Need for better training of college teachers of physics, T. R. McConnell—231(T)
 Should prospective college physics teachers be required to do research? K. Lark-Horovitz—231(T)
 Teacher training in the graduate school, Claude E. Buxton—460(T); 571
 Training college physics teachers to aid in improving science teaching in secondary schools, P. G. Johnson—231(T)
 Training of college teachers; experiences of a university examiner, Leo Nedelsky—460(T)

Testing, theory and techniques

Testing for critical thinking in physics, Paul J. Burke—231(T); 527
 Testing in terms of specific objectives of physics teaching, Leo Nedelsky—231(T)
 Tests being developed at Colgate, C. L. Henshaw—231(T)

Textbooks

Book review: *A source book in Greek science* by Morris R. Cohen and I. E. Drabkin, J. J. G. McCue—228
 Book review: *A textbook of heat* by LeRoy D. Weld, J. M. Cork—97
 Book review: *Atomic energy* by Karl K. Darrow, D. R. Hamilton—97
 Book review: *College physics* by Newton Henry Black, Frank E. Hoeker—96
 Book review: *Cybernetics* by Norbert Wiener, R. B. Lindsay—226
 Book review: *Elektricitätslehre* by R. W. Pohl, Otto Blüh—524
 Book review: *Elementary photography* by G. G. Quarles, I. C. Cornog—523
 Book review: *Fear, war, and the bomb* by P. M. S. Blackett, Richard Schlegel—229
 Book review: *Fourier technique in x-ray organic structure analysis* by A. D. Booth, A. L. Patterson—322
 Book review: *High resolution spectroscopy* by S. Tolansky, C. D. Hause—394

Book review: *Introduction to atomic physics* by Otto Oldenberg, Francis G. Slack—454

Book review: *Introduction to atomic physics* by S. Tolansky, Henry Semat—165

Book review: *Introduction to statistical mechanics* by Ronald W. Gurney, David M. Dennison—558

Book review: *Microwaves and radar electronics* by Ernest C. Pollard and Julian M. Sturtevant, R. D. Spence—322

Book review: *Modern introductory physics* by Ira M. Freeman, J. W. McGrath—454

Book review: *Nuclear radiation physics* by R. E. Lapp and H. L. Andrews, Clark Goodman—94

Book review: *Outlines of physical chemistry* by Farrington Daniels, F. E. Brown—165

Book review: *Physics for arts and sciences* by L. Grant Hector, H. S. Lein, and C. E. Scouten, W. Weniger—324

Book review: *Physics, principles and applications* by Henry Margenau, William W. Watson, and C. G. Montgomery, George H. Vineyard—455

Book review: *Practical spectroscopy* by George R. Harrison, Richard C. Lord, and John R. Loofbourow, Katherine Chamberlain—392

Book review: *Principles of electricity and magnetism* by Gaylord P. Harnwell, F. T. Adler—522

Book review: *Principles of mathematical physics* by William V. Houston, Richard A. Beth—393

Book review: *Principles of physics III. Optics* by Francis W. Sears, Joseph Valasek—392

Book review: *Quantum mechanics* by Leonard I. Schiff, Morton Hamermesh—453

Book review: *Radio at ultra-high frequencies*, Vol II, by members of the RCA staff, Samuel Seely—98

Book review: *Science at war* by J. G. Crowther and R. Whiddington, Seville Chapman—227

Book review: *Suggestions for science teachers in devastated countries* by J. P. Stephenson, Ira M. Freeman—323

Book review: *The elements of physics* by Alpheus W. Smith, Vernon L. Bollman—95

Book review: *The structure of matter* by Francis Owen Rice and Edward Teller, A. T. Goble—523

Book review: *Vacuum manipulation of volatile compounds* by R. T. Sanderson, J. D. Heldman—229

Explanations of action in simple cell (given in physics textbooks), E. H. Schrieber—335(T)

Units and dimensions

Dimensions of angular displacement and torque, Robert S. Seamons—521(L)

Dimensions of physical concepts, M. M. Morris—451(L)

Dimensions of physical concepts, Parry Moon and Domina Eberle Spencer—171

"Practical" system of electromagnetic units, Gustave R. Holm—168(L)

Reply to M. M. Morris, Parry Moon and Domina Eberle Spencer—452(L)

Three-dimensional electrical units QLT and ILT, F. W. Warburton—164(T)

Three primary units are sufficient; a reply, F. W. Warburton—320(L)

Use of the American language

American prose, Henry A. Perkins—398(L)

English composition and American prose, John Satterly—167(L)

Horrid words in physics, Foster Strong—164(T)

Student's facility in American prose, H. David Rix—90(L)

Student's facility in American prose, Pearl I. Young—90(L)

Visual materials and methods

Films selected for first-year college physics, Robert L. Weber—408

Films showing repetitive phenomena—a progress report of the Committee on Visual Aids, Mark W. Zemansky—462(D)

Formation of crystals in polarized light, K. H. Bracewell—335(T)

Physics in motion pictures, Alfred B. Butler—447(L)

Science on television, E. R. Phelps—460(T)

Use of motion pictures in laboratory dynamical studies, Carl L. Bailey, Jaan Jurison, and M. Eugene Rudd—517

Visualization of normal coordinates of coupled oscillators, D. R. Inglis—391(T)

Westinghouse atomic energy charts, O. Blackwood—211(T)

